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Dennis Postupack

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LAZORCIK, JASON L

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/813,435	Applicant(s) POSTUPACK ET AL.	
	Examiner Jason L. Lazorcik	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6-16,46,49,55-59,61 and 64-88 is/are pending in the application.
- 4a) Of the above claim(s) 50-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-16,46,49,55-59,61 and 64 is/are rejected.
- 7) ☒ Claim(s) 1, 6-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

Applicant's election without traverse of Group I, Species 1 (claims 1-16, 46-49, 55-59, and 61-72) drawn to a method of chemically tempering glass by dipping the formed glass article in a molten salt bath in the reply filed on 12/20/2006 is acknowledged.

Originally submitted claims 50-54 and 60 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons pursuant to the reply received 12/20/2006

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 50-54 and 60 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Objections

Claims 1-16 are objected to because of the following informalities: The amendment to claim 1 contains an obvious grammatical error, (e.g. "for for" in line 4). Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 74 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner has found no basis on the specification as originally filed for the limitation wherein "the temperature of the salt bath is at least about 25°C above the preheating temperature".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, 7, 8, 10, 11, 12, 13, 14, 46, 49, 55, 56, 57, 58, 59, 61, 64, 65, 66, 70, 71, 72, 73, and 75-88 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by British Patent (GB 1,010,164) assigned to PITTSBURGH PLATE GLASS CO and hereafter referred to as GB'164.

With respect to the identified claims, the instant reference teaches (Example IV-Samples 60-77, Page 12, lines 16-44) a method wherein a "polished" soda-lime silica glass plate is preheated to 1050°C (565°C) for 10 minutes, immersed in a molten salt bath of potassium nitrate for 15-60 seconds at 1050°F or for "about 10 seconds or

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less", removed from the bath and maintained at 950°F (510°C) for 15 minutes. **Absent any compelling and substantially unexpected results to the contrary**, the claimed immersion time of "about 10 seconds or less" understood to be wholly anticipated by the prior art immersion time of 15 seconds. While the instant reference teaches a "typical" composition of soda lime silicate glass which is suitable for the inventive method (page 2, lines 31-42), it is silent regarding the strain point and annealing point associated with the composition. Regarding Claim 56, the instant reference clearly indicates that acceptable processing temperatures may range "as high as 1200°F to 1400°F" (Page 3, Lines 51-58)

As evidenced in the disclosure by Grubb (US 3,498,773), a glass material having a composition within the GB'164 experimental range has an annealing point of 1033°F and a strain point of 986°F (Column 9, Lines 66-75). Therefore the GB'164 reference is understood to inherently teach dipping the glass article in a salt bath "at least above the annealing point temperature" and to maintain said article at a temperature "between the strain point temperature and about 150°C below the strain point temperature".

With particular respect to Applicants newly added **claims 73 and 75 to 88**, Gb'164 teaches that "it is generally preferable to preheat the surfaces of the glass sheets to be treated to a temperature approximating that at which the molten potassium salt bath is maintained prior to contacting the glass sheets with the treating bath. However, it will be realized that the glass can be heated to a higher temperature than that at which the potassium salt is maintained, and **the converse is also true.**" (Page 2, lines 97-105)

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Regarding Claims 7, 8, 10 through 12, and 65 to 66 the reference teaches "the potassium nitrate salt can be employed either alone or in conjunction with other potassium salts, e.g., potassium chloride, to constitute the potassium salt treating bath...An exemplary mixed potassium salt treating bath within the purview of the present invention is one having about 70 mole percent potassium nitrate and 30 mole percent potassium chloride. However, the advantages attendant to the method of the present invention can be secured using a potassium nitrate potassium chloride treating bath having a potassium nitrate mole percent ranging from 50 percent to 100 percent. (page 4, lines 89-116)

Claim 16 and 69 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over GB'168. In accord with the instant claim, the GB'168 reference teaches that after treating of the glass article, a thermoplastic layer or "scuff resistant coating" may be applied to the surface of the glass article (page 5, lines 102-111). In the event that the instant disclosure is deemed not to anticipate the limitations set forth in the instant claim, it is the Examiners position that one of ordinary skill in the art would have been well aware and fully equipped to perform these actions. Specifically, it would have been obvious to subject the salt treated glass article to subsequent processing steps as routinely practiced in the art (e.g. cleaning residual salt from the treated article and/or applying surface treatments or coatings to said article).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 15 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over British Patent (GB 1,010,164) as applied under 35 U.S.C. 102(b) above in the rejections of Claim 1 and 61, respectively.

Claim 15, 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB'164. The instant reference teaches use of a polished glass substrate however it is silent regarding the nature of the polishing process or that it should specifically be performed by "flame polishing". Flame polishing is a common technique used by practitioners in the Art as a method of attaining a polishing glass performs. Absent any unexpected results to the contrary, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize "flame polishing" to produce the disclosed "polished" glass substrate.

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Claims 9 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over British Patent (GB 1,010,164) as applied under 35 U.S.C. 102(b) above in the rejections of Claim 1 and 61, respectively, and in further view of Duke (US 3,573,072). GB'164 teaches that the molten salt bath may comprise a mix of potassium salts, however said reference is silent regarding the specific use of potassium sulfate. The Duke reference teaches that "While the nitrate bath may be used at temperatures up to about 600' C. or so, the salt tends to decompose at such high temperatures and severely attack the article surface as well as containers and other equipment. For higher temperature work then, it is convenient to employ a molten salt bath composed of potassium chloride and potassium sulfate and based on a eutectic mixture of these salts. This is a mixture of about 52% KCl and 48% K₂SO₄ which melts at about 690' C." With the Duke reference in hand, one of ordinary skill in the art at the time of the invention seeking to perform the GB'164 process at temperatures above about 600oC would obviously made use of a salt bath comprising potassium sulfate as taught by Duke. The use of potassium sulfate would have been an obvious approach due to the greater stability and lower chemical reactivity of this composition at elevated temperatures.

Claims 74 is rejected under 35 U.S.C. 103(a) as being obvious over British Patent (GB 1,010,164) as applied under 35 U.S.C 102(b) in further view of GB 1,346,747.

The GB'164 reference teaches preheating the glass sheet to the a temperature "approximating" that of the molten salt bath and as identified in the rejection under 35

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U.S.C 102(b). The GB'164 reference further indicates that the glass may be preheated to "a higher temperature" than the treating bath and that "the converse is also true".

The reference does not explicitly limit process to the claimed temperature range wherein "the temperature of the salt bath is at least about 25°C above the preheating temperature".

With this point in mind, the GB'747 reference teaches a method for chemically strengthening a glass sheet by contact with a bath of molten alkali metal ions having a diameter greater than the alkali metal ions present in the glass. The reference explicitly discloses that (Page 1, lines 57-78);

"the ion exchange process upon which this type of strengthening is based obeys the conventional laws of diffusion. **The depth reached by the large alkali metal ions increases with the duration and temperature of the treatment and depends upon the composition of the glass under consideration**...if the thickness in the compression is decided upon, the duration of the treatment will become shorter, the higher the temperature adopted. In reality however, **the higher the temperature rises, the more rapidly do the stresses induced by the ion exchange relax**. This means that, for a given thickness of compressive layer, the strengthening effect diminishes when the temperature rises. It follows that, if the thickness under compression and the strengthening required are imposed values, **there exists an optimum treatment temperature which**

corresponds to the minimum duration of said treatment, that is to say the most economical process.”

The GB'747 reference is understood to teach that both immersion time in the molten bath and the temperature of the treatment steps are established as result effective variables of the strengthening process (page 1, Lines 57-78). Although GB '164 does not explicitly require claimed temperature ranges, the GB'747 reference clearly indicates that it is well within the prevue of one of ordinary skill in the art to optimize both immersion time and bath temperature in order to achieve an adequate substrate strengthening in the most economical fashion.

Response to Arguments

Applicant's arguments filed April 11, 2007 have been fully considered but they are not persuasive.

It is believed that all of Applicants arguments have been fully addressed in the prior art rejections under 35 U.S.C. 102(b) and/or 103(a) above. They are here summarized for reference:

1) Applicant argues that the claimed immersion time of “about 10 seconds or less” is “about” 30% less than the prior art time of 15 seconds. Examiner is no persuaded. Specifically, absent any compelling and substantially unexpected results to

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the contrary, the prior art exemplified range of 15 seconds is understood to anticipate applicants claimed ranges of "about 10 seconds or less" and "about 3 and 5 seconds".

Further, although the rationale is not required under the above rejection, Applicant is directed to the GB'747 teachings which render the immersion time as a result-effective variable of the strengthening process. The reference explicitly states that "there exists an optimum treatment temperature which corresponds to the minimum duration of said treatment". Although it is the Office position that about 3 seconds and about 10 seconds are both anticipated by the prior art example of 15 seconds, one of ordinary skill would also find the claimed ranges to be a merely obvious extension over the GB'164 reference when viewed in light of the GB'747 teachings.

2) Applicant argues that the GB'164 reference does not teach "preheating the glass article to a temperature lower than that of the salt bath" and that GB 164 merely preheats the glass to at least the temperature of the salt bath". Examiner strongly disagrees. As pointed out in the rejection above, GB '164 clearly states that "However, it will be realized that the glass can be heated to a higher temperature than that at which the potassium salt is maintained, and **the converse is also true.**" (Page 2, lines 97-105).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Lazorcik whose telephone number is (571) 272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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